

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently Amended) A polyurethane foam comprising less than about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the foam passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test,

wherein the melamine is ground melamine, and

wherein the ground melamine has a volume average particle size distribution of 100% <= about 74 microns, 75% <= about 19.25 microns, 50% <= about 12.28 microns, 25% <= about 6.84 microns, 0% <= about 0.83 microns.

2. (Canceled)

3. (Original) The foam of claim 1 wherein the foam is a reaction product of one or more polyols, one or more isocyanates, one or more blowing agents, and one or more catalysts.

4. (Original) The foam of claim 1 wherein the melamine comprises less than about 8.5 weight percent based on the total weight of the foam.

5. (Original) The foam of claim 1 wherein the melamine comprises from about 5 to about 6 weight percent based on the total weight of the foam.
6. (Original) The foam of claim 1 wherein the additional flame retardant compounds comprise less than about 8 weight percent based on the total weight of the foam.
7. (Original) The foam of claim 4 wherein the additional flame retardant compounds comprise less than about 8 weight percent based on the total weight of the foam.
8. (Original) The foam of claim 1 wherein the additional flame retardant compounds comprise less than about 6 weight percent based on the total weight of the foam.
9. (Original) The foam of claim 5 wherein the additional flame retardant compounds comprise less than about 6 weight percent based on the total weight of the foam.
10. (Original) The foam of claim 1 wherein the weight ratio of melamine to the additional flame retardant compounds is in the range of from about 0.5 to about 2.0.

11. (Original) The foam of claim 1 wherein the weight ratio of melamine to the additional flame retardant compounds is in the range of from about 0.6 to about 1.5.

12. (Original) The foam of claim 1 wherein the weight ratio of melamine to the additional flame retardant compounds is in the range of from about 0.75 to about 1.25.

13. (Original) The foam of claim 1 wherein the weight ratio of melamine to the additional flame retardant compounds is about 1.

14. (Original) The foam of claim 3 wherein the reaction product comprises about 100 parts per hundred of the polyol.

15. (Original) The foam of claim 1 having a density of within the range of from about 0.9 to about 4.25 lb/ft³, a 25% IFD in the range of from about 7 to about 150 lb/50in², and an air flow in the range of about 2.0 to about 5.5 ft³/minute.

16. (Original) The foam of claim 1 having a density of within the range of from about 0.9 to about 1.5 lb/ft³, a 25% IFD in the range of from about 7 to about 54 lb/50in², and an air flow in the range of about 4.0 to about 5.5 ft³/minute.

17. (Original) The foam of claim 1 having a density of within the range of from about 1.6 to about 4.25 lb/ft³, a 25% IFD in the range of from about 11 to about 150 lb/50in², and an air flow in the range of about 2.0 to about 4.0 ft³/minute.

18. (Canceled)

19. (Canceled)

20. (Previously Presented) The foam of claim 1 wherein the additional flame retardant compound is a neutral chloroalkyl phosphate ester.

21. (Original) The foam of claim 1 wherein the additional flame retardant compound is phosphorus-bromine.

22. (Currently Amended) A slab stock process for making a polyurethane foam comprising adding from about 5 to about 10 weight percent ground melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam,

wherein the melamine has a mean particle size of about 28 microns or less, ~~and~~

wherein the foam produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, and

wherein the ground melamine has a volume average particle size distribution of 100% <= about 74 microns, 75% <= about 19.25 microns, 50% <= about 12.28 microns, 25% <= about 6.84 microns, 0% <= about 0.83 microns.

23. (Canceled)

24. (Currently Amended) The process of claim 22 23 further comprising pre-blending the ground melamine with a polyol under high shear prior to foaming to form a pre-blend.

25. (Original) The process of claim 24 wherein the pre-blend is about a 1:1 weight ratio of melamine to polyol with a viscosity of about 3600 cps at 75°F and with no visible agglomerations.

26. (Original) The process of claim 24 wherein the high shear is applied via an in-line shear pump.

27. (Original) The process of claim 26 wherein the pre-blend is recirculated through the shear pump for a minimum of about 2 hours at about 300 lbs/hr flow rate and temperature of about 21 °C.

28. (Original) The process of claim 24 further comprising agitating the pre-blend to maintain the melamine suspension therein prior to foaming.

29. (Canceled)

30. (Canceled)

31. (Currently Amended) A carbon dioxide frothing process for making a polyurethane foam composition comprising:

adding from about 5 to about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam;

~~pre-blending the~~ mixing a melamine and with a polyol pre-blend under high shear prior to foaming to form a blend; ~~and~~

removing melamine agglomerations from the blend by filtering the blend through a first filter pre-blend prior to entry into a mixing head;

injecting liquefied carbon dioxide into the blend;

mixing the blend;

filtering the blend through a second filter; and

conveying the blend into a gate bar,

wherein the foam composition produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test.

32. (Previously Presented) The process of claim 31 wherein the pre-blend is about a 1:1 weight ratio of melamine to polyol with a viscosity of about 3600 cps at 75°F and with no visible agglomerations.

33. (Original) The process of claim 31 wherein the high shear is applied via an in-line shear pump.

34. (Previously Presented) The process of claim 33 wherein the pre-blend is recirculated through the shear pump for a minimum of about 2 hours at about 300 lbs/hr flow rate and temperature of about 21 °C.

35. (Original) The process of claim 31 further comprising agitating the pre-blend to maintain the melamine suspension therein prior to foaming.

36. (Canceled)

37. (Currently Amended) The process of claim 31 wherein the first filter has a hole size of about 300 microns.

38. (Canceled)

39. (Canceled)

40. (Currently Amended) The process of claim 39 wherein the second filter has a hole size about less than or equal to the width of the discharge slot on the a gate bar ~~for laying down the foam composition.~~

41. (Previously Presented) The foam of claim 1 wherein the melamine has a mean particle size of about 28 microns or less.

42. (Previously Presented) The foam of claim 1 wherein the melamine comprises from about 5 to about 8.5 weight percent of the total weight of the foam, and the additional flame retardant compounds comprise less than about 6 weight percent based on the total weight of the foam.

43. (Currently Amended) The process of claim 31 further comprising: scraping the first filter to remove any accumulated agglomerations thereon.

44. (New) The process of claim 31 wherein the melamine is ground melamine.

45. (New) The process of claim 44 wherein the ground melamine has a volume average particle size distribution of 100% <= about 74 microns, 75% <= about 19.25 microns, 50% <= about 12.28 microns, 25% <= about 6.84 microns, 0% <= about 0.83 microns.